THE OPTICAL MAGIC LANTERN JOURNAL AND PHOTOGRAPHIC ENLARGER.

EDITED BY J. HAY TAYLOR.

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CONTENTS.

PAGE.
Notes 71
The Lantern for Suffering Humanity 72
A Binocular Lanternescope ... 72
Hints on Enlarging 73
To Obtain the Best Light from Oil Lamps 74
How I Became a Lanternist—I. 74
Photography in Natural Colours Applied to the Optical Lantern 75
Screen Frames 75
Editorial Table 76
Flashes on Lantern Topics ... 77
Correspondence. — Lantern Pointer – Construction of Oil Lamp—Gas-Bag Explosions — Chromo-Litho Slides — Ether-Oxygen Saturator — The Lantern for Suffering Humanity 77
Society Meetings 78
Notes and Queries 80

CONTENTS OF No. 19.

Notes—The Lantern for Suffering Humanity (A New Scheme)—Oil Lamps—Hand Cameras for Obtaining Slides for the Lantern (No. 8)—Hints on Enlarging—The Photography of Microscopic Objects—An Effective Intermediate Regulator—Chromo-Litho Slides—Flashes on Lantern Topics—Shenstone's Enlarging Apparatus—A Light Folding Tent—Editorial Table—Correspondence (Ether-Oxygen Saturator—Chromo-Litho Slides—Gas-Bag Explosions)—Society Meetings—Notes and Queries.

Notices.

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Notes.

A HAPPY New Year.

* * *

THE Lantern Society has decided to abolish the entrance fee for new members. The subscription is one guinea per annum.

* * *

IN our last issue we referred to Messrs. Thomas and Co., of Exeter, as the agents for Alexandra Oil. We have been informed that this firm are the proprietors of this oil and that they have agents in the large towns. This oil is said to have a flashing point as high as 135 to 140 Fahr.

* * *

ON March 6th, the Liverpool Photographic Exhibition (triennial) will open at the Walker Art Gallery, the same premises in which the last (1888) exhibition took place. It promises to be a big affair.

* * *

IN a letter from Mr. Thos. Fletcher, Warrington, he says, "I think it would be a decided addition to the journal if you would publish a series of articles on the various adaptions of the lantern for purposes other than showing transparencies, The paper of my own which you published was much too short and deficient in necessary detail. A general departure into the realms of physical experiments is slowly coming, and it would be desirable for the LANTERN JOURNAL to take the lead in this." Many of our readers will be glad to hear that we have made arrangements for the publication of a series of articles in accordance with the foregoing.

* * *

Rambles at home and abroad with a hand camera was the title of a lecture given by Mr. A. R. Dresser at the Metropolitan Tabernacle Lecture Hall. The lecture which was an *ex tempore* one was full of interest, and the lantern slides were greatly appreciated. The proceeds of the evening were devoted towards providing a Christmas dinner for the poor in the neighbourhood.

* * *

MR. NEWTON, of 3, Fleet Street, has issued a series of photo-micrographic slides on the Bacillus Tuberculosis, a subject which is at present occupying the mind of Dr. Koch and other leaders of medical science. The set spoken of consists of twelve slides.

* * *

THE manufacture of liquid carbonic acid gas is now carried on extensively. The washed and dried gas is pumped successively into a series of receivers gradually decreasing in size until the gas is liquefied, which occurs when the pressure is raised to 36 atmospheres at a temperature of freezing point.

* * *

A NEW form of light, which is said to be as powerful as the electric light, and the efficiency of which is not impaired by fog, is obtained by a clock-work arrangement pouring powered magnesium at frequent intervals into the flame of a round wick lamp, producing a very brilliant flash of light.

* * *

As we have not had an opportunity of trying the "Collins" hand camera since we received it, we must postpone No. 9 of *Hand Cameras for Obtaining Slides for the Lantern* until next issue.

* * *

THE following paragraph has been going the round of the papers :—"A panic was caused at a Unionist meeting at East Coker, near Yeovil, on 17th December. A lecturer was showing some views by means of a limelight lantern, when there was a loud explosion. The people rushed to the doorway, a hissing noise from the lantern adding to their fright. Ultimately, it was found that one of the cylinders in which gas was stored had exploded." But from information we have received we learn that the connections at the gas bottle were not screwed down, hence when the gas was turned on there was a slight hissing noise, which was heard only by the few persons immediately around the lantern, and that there was no panic.

* * *

MR. ALFRED UNDERHILL has resigned his position of hon. assistant sec. to the Croydon Camera Club.

The Lantern for Suffering Humanity.

IN last issue we suggested a scheme whereby hospital patients might have a periodical lantern entertainment. We are pleased to announce that offers have been made of cash, slides, apparatus and assistance. Those interested are hereby invited to attend a meeting on

Tuesday, January 6, at 181, Aldersgate-street, E.C., at 7.45 p.m.,

in order to discuss the best means of conducting this worthy object.

A Binocular Lanternescope.

WE recently inspected an instrument of the Lanternescope class which had been constructed with the intention of enabling one to view lantern slides in a magnified state, using both eyes, but when we looked at a slide through this instrument we saw nought but a confused picture.

In the instrument spoken of, two small ordinary convex lenses were mounted at the ends of brass tubes attached to the box holding the slide. As far as fitting to one's eyes, the tubes were perfect, but there their usefulness ceased. When the lenses were removed from the tubes and the eye applied, it was possible to see about two-thirds of the picture from either side, and as the eye is applied at the centres of the lenses, part of the slide was seen by one eye and part by the other, hence one of the causes of the confused appearance.

In a stereoscope, the lenses are so formed as to bend the rays coming from each picture inwards and upwards in such a way that they enter the eye parallel, but when the picture to be viewed is a single one it is necessary that the rays be bent in the opposite direction before reaching the eye, at which time they must be parallel.

The general principle by which two eyes may be used for seeing the one picture may be exemplified by taking a large magnifying glass and placing in contact with it a piece of brown paper or cardboard having two holes in it to suit the eyes, if then a slide be held at sufficient distance it can be clearly and distinctly seen with both eyes.

As the greater portions of the glass spoken of are covered, they are therefore useless for the purpose of aiding the vision ; consequently it will be apparent that only those portions opposite the eye-holes are required.

One of the best means of making an instrument with which both eyes may be used is by mounting a pair of plano-convex eye-pieces 1½ inches in diameter of about 8 inches focus in conjunction with a prismatic lens of the same focus, each set separated the usual distance of the eyes apart.

The prisms, which are of the same form as those in stereoscopes, are placed in the opposite direction to those in a stereoscope, and must be mounted so that the thick end of the wedges are presented to each other.

The lens and prism together will give a focus of about 4 inches, at which distance the lantern slides must be stationed. Hoods should be placed on the outer end of each lens so as to shade extraneous light from the eyes.

With an instrument of this class, slides can be presented to the eye greatly amplified, giving the appearance of being projected on a large screen.

The comfort of using both eyes for the purpose and in the manner described can be appreciated only by those who try it.

The lenses should be fitted at the end of an enclosed box of sufficient width, the other end being fitted with any suitable lantern carrier that provides for the exhibition of a succession of slides; outside of this should be placed a piece of flashed opal to provide a suitable background for the pictures.

——:o:——

Hints on Enlarging.

BY A. R. DRESSER.

CHAPTER III.

NOW, having described the apparatus required, I will speak of enlarging direct on bromide paper through the camera. The work is really the same as described before, only bromide paper is used instead of glass. Take a piece of clean glass, free from scratches and marks, and put in the holder where sensitized plate ordinarily goes; then on it place a sheet of bromide paper, and over that, a piece of cardboard to keep it flat. After closing the back, all is ready for exposure. By employing this means you are unable to do combination printing, but you can double print—that is, put in clouds. Of this, however, I shall speak later on. I am a great advocate for enlarging in this way. When one gets experienced, failures are rare, and besides, double printing can be done, or any dodging or shading of the negative in parts it may require. The greatest advantage of all is that camera and stand can be worked in any ordinary room, and that the same outfit will do either for enlarging or reducing.

When enlarging, the lens is close to the plate; and if working in an ordinary room, or even out of doors, all that is necessary is to throw a dark cloth over the front to protect the lens from any stray light, and do the dodging and vignetting at the back of the negative. The exposure which will be required depends to a great extent on the negative and stop used. I enlarged ½-plate up to 15 × 12, my window facing W. (with a tin reflector outside at an angle of 45 degs.), using a Beck 8 × 10 R R., F 22, and Fry's Argentotype Bromide I gave nine minutes, the negative being a fair one, but certainly not thin. On a fine summer day three minutes would be enough.

The next plan is enlarging by throwing the image on a screen, the same as when using an enlarging lantern. Here a dark room is required, as one is not able to work where there is any white light. If the dark room is a fairly large one, 8ft. or 10ft in length, it is very easy to rig up an enlarging camera to work this way, and at a small cost, as almost any camera and lens can be employed; but a good portrait lens (½-plate) works best, and gives all that is required. Supposing one has a dark room large enough to work in, it is necessary to cut a hole in the wall facing N. or W., and place a camera against it, excluding all light excepting that which comes through the lens. The drawing (Fig. 5) explains what I mean. A is a hole cut in the wall, with a camera placed against it, excluding all light, except that which comes through the lens. It can be made to fit in a groove, and the carriers for the negatives fastened in the hole in the wall (behind the camera), but whichever way the camera is fixed, allowance must be made to get at the negative, so as to put in a sky negative when one requires to double print. To do this I fix a frame of carriers in the wall, flush with the front, or nearly so, and then nail two pieces of grooved wood (AA) in Fig. 6, on which I have a board (BBBB), to which is fastened my camera (C) in a manner that it will not move. The board holding the camera moves up and down, so I can, by lifting the board up, fasten it on a nail with a piece of string, and can then readily get at my negative D, and when the board is let down again—if it is made square—all will be in register. So that for printing on sky, after focussing, I take the view negative out, put in a sky one, give the required exposure, then lift up the board the camera is on, take out sky negative, replace with view negative, and give the exposure required. The manner I prevent light getting on the paper I will explain when I come to that part of the enlarging apparatus.

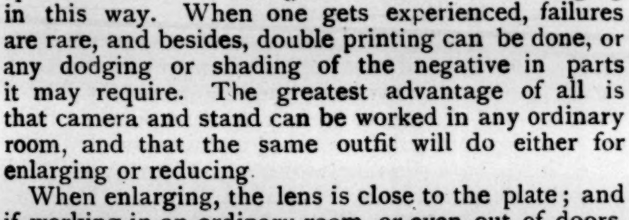


FIG. 5.

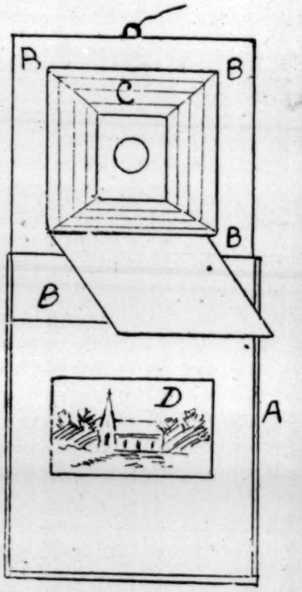


FIG. 6.

To return to Fig. 5. Procure a long board or table, with grooved pieces of wood, on which is an easel or board to throw the enlargement on (see B, Fig. 5). Now, here there are various ways of working. One can use a frame, as shown in the drawing, to pin the paper upon, or else an easel, as sold at the various photo dealers, but if so you are *unable* to do double printing, and it is this point I referred to above when I said I would explain how I kept the light from getting to the bromide paper. I have an easel that can be moved back and forwards to do the focussing on, on which I have fastened the back of a 15 × 12 camera—that is to say, the part that holds the ground glass and the dark slide—so all one has to do is to buy any old camera at auction, the size required to work up to—viz., 8 × 10, 10 × 12, or 15 × 12—and use the dark slides and ground glass for putting on the easel as shown. The great advantages of so doing will be apparent, and the cost is next to nothing, for if one watches his chance he can buy the back part of a camera with a dark slide for a few shillings. Focussing can then be done much better, as it is done on the ground glass; you are not bothered with pins to pin your paper on a board, and you have not to work in the dark; and, lastly, you are able to double print without fogging your paper. When the sky negative has been exposed put in the slide of the dark back before drawing up the camera to replace the view negative. I make a point in calling attention to working this way—that is, having an ordinary dark back for holding the bromide paper—for reasons stated above, and feel sure every one should adopt this way for holding the paper, whether the enlarging is done by daylight or artificial light. Those who pin their bromide paper on the easel, must make a cap with a piece of thin yellow glass in to use in place of the ordinary cap, which will enable them to see exactly where to pin the paper.

I have, I think, fully explained the two ways of working or making enlargements by daylight, and will leave the rest of my hints for another chapter.

——:o:——

To Obtain the Best Light from Oil Lamps.

By Alfred Watkins.

Of the general convenience of the two, three, and four-wick paraffin lamps for lantern use, there can be no doubt, but most users of this means of illumination have had experience of the inconveniences which arise with their use.

The four-wick burners are usually extremely sensitive as to height of flame, and if they are set to burn to give the best light they are apt to commence to smoke in a few minutes. This fault is often aggravated by a too contracted hood at the top of the chimney. I have seen great improvements made in lamps given to smoking, by bending the hood so as to obstruct the draught less; or, better still, by removing the hood altogether, although in the latter case a patch of light will be somewhat prominent on the ceiling of room.

Most workers now know how to keep the lamp free from smell—the metal-work should be carefully wiped just before using; but I have recently seen a case in which, despite of all care, a horrible stench resulted when lighting up came. This was finally traced to a deposit of odorous soot inside the metal chimney, and when this part was carefully wiped out, all was well again.

Another defect usual with two or four-wick lamps is the dark line down the centre of the light circle on the screen, which of course is the image of the dark space between the wicks.

I was recently consulted by a photographer in a difficulty. He had rigged up the parts of a sciopticon (2-wick) lantern for enlarging, the condenser being placed in a partition which closed in his dark room, the negative close against it, and the lamp on a little shelf outside. The arrangement was quite satisfactory with the exception of the dark line, which quite spoiled his enlargements. Various kinds of remedies were tried without success; but fortunately the lamp on the shelf was free to be moved in any direction, and I finally discovered that by placing the lamp at a considerable angle (about 35 degrees) to the optical line of the arrangement, the dark space between the wicks was no longer presented to the condenser, and the screen was evenly illuminated.

Makers should see to this, and buyers should refuse to purchase lamps in which the wicks are at right angles to the condenser.

——:o:——

How I Became a Lanternist.—I.

By the Vice-Chairman of the Lantern Society.

I am not a particularly good one at telling a yarn—a much better one at listening. I enjoy little tales, especially when spiced with fun in them; but I generally notice that when I retail them, they require some explanation after my interpretation. My early experiences with the lantern were not romantic, not strikingly funny; not far reaching or profound; in fact they were not anything in particular.

It was some time in the fifties that I attended an exhibition which created great excitement in that most singular of all villages, viz., Wixhall, in Shropshire, where the marvellous and astonishing feat of a man swallowing rats was to be shown under the patronage of the gentry of the neighbourhood; and Hodge and Tommy Atkins, who was on furlough, and all the school children of the place were there.

Wixhall is a village or township of which the late Rev. W. F. Calloway used to say that a stranger on entering it would lose his way twice for finding it once. There are hundreds of miles of lanes in it, though only a little parish about four miles wide and about two miles long. Now this is very singular, is it not, that a thing should be wider than it is long. I will explain it. I learnt in those days from our village schoolmaster in speaking of everything pertaining to the map of England that the top and bottom was its length, and I have never been able to unlearn that notion that if a county went from one side of England to the other, that would still be its width if it were only a mile from south to north. But, perhaps, this is a superstition that needs uprooting.

Well, that entertainment came off. Such a crowd. All the blankets and bed quilts in the neighbourhood were used in darkening the innumerable windows of the school room, which was a very large one, capable of holding some hundreds. The falling snow, Babes in the Wood, all these things paled before the final climax—the man swallowing the rats. With the other boys I began counting, but I shall never muster up courage to tell your readers how many rats that man ate. It was very wonderful. I always had a curiosity about a lantern after that day.

About a dozen Christmases since, somebody was recommended to me. Of course the somebody in question was hard up. I have noticed that the people who get recommendations to one are very often hard up, So this party said that he had a lantern, lamp, lens, and many boxes of slides, all to sell cheap. These slides were not your insignificant unmounted 3¼in. × 3¼in. mere tame dark photographs; nothing so insignificant. Be it noted, they were "magnificent productions on glass," mostly those known as slipping slides. The majority of them have since slipped out of my possession. Some neighbours of mine found them useful and borrowed them on many occasions. As they come back a few less each time, I am gradually thinning the stock without having to go to the expense of advertising, and the necessary negotiations to dispose of them in the usual way.

But to return to my subject, if I have one. I am sorry to be so verbose, but I will try to do better in future. I asked how much for this great collection? There was a set on natural history; I possess them still, and in a great many of the slipping fellows above mentioned, a set on astronomy, with such wonderful rings and such illuminosity and phosphorescent tints as I never beheld before or since. The whole of these were packed in a box 1ft. 6in. square; it was a large cube, but I got it home after having paid the full price in one instalment, viz., 25s., which may surprise some; but it happened to be just at Christmas time, when everything is looked on with indulgent eyes. If I were an artist I would try and sketch that lamp, I would try and describe that lens: it might be useful for a lecture before our society, but our readers must imagine it. I tried it, therefore the readers have the best of it.

The first exhibition I gave was a sort of private rehearsal. There were my own children, some other folks' children, and as many adults as I conceived to be sufficiently weak and credulous as to entrust themselves to the mercies of my ciceroneship for about an hour and a half There were sundry little mishaps, but on the whole it was a very remarkable show.

In my next article, which I shall call No. 2, I shall endeavour to focus the numerous incidents incidental to my first show, and project them in words upon a page of the next issue of the *Optical Magic Lantern Journal*.

——:o:——

Screen Frames.

By Hilton Grundy.

Mr. Tranter in last issue has, by his call for each to help the many, induced me to again try to help that large body of lanternists who cannot afford elaborate apparatus. For a very few shillings any one with the least ingenuity can be the possessor of a good, serviceable, portable, and I think handsome screen frame.

I will give my own size screen, viz., 8ft. square. This may be enlarged or decreased according to requirements.

At a local ironmonger's I obtained four zinc tubes, 9in. long, 1¼in diameter, and four zinc elbow joints of the same diameter, and with each branch of elbow about 4 or 5 inches long. These lengths, I think, may be lessened, but I wished to make sure of a good firm bar. Near one end of each tube and elbow I had a hole drilled for a screw. I next obtained some strong rake or brush handles and cut them in lengths so that when connected with the tube each side of screen frame was a little over 8ft. Be careful to make frame a little too large in order to allow for tapes, &c., on screen, as it is easier to cut a little off than to add to the length of each pole.

I stained and oil polished each pole to resist action of water when the screen was used wet.

Screw an elbow on each of the four poles, and a tube on each of other four poles. The pole must go *half way* through tube. The frame is now ready for fittings.

Put frame together, get two dozen small screw hooks. Put one in the frame on each side of tubes and elbows, and one in the middle of each pole, between the elbow and tube. That is six on each side, a little over 1ft. apart. Fasten tapes on the screen in loops, to correspond with positions of screw hooks. I put hooks in first so that no loop on screen shall come opposite metal joints except the corners of screen. To fasten corners of screen, I put a long loop of tape on corner, and also stitched on a large dress or mantle hook (used by ladies). The tape would then go over elbow joint, and be held in position by the hook. The screen holds the frame securely together, and it may be hung from a beam, and fastened to floor by means of large screw hooks and thin rope. Or for an opaque screen, it may be hung on the wall by two or even one nail. I find it best to fasten the four corners in fixed position, as it keeps frame and sheet square, and may also, by having all joints loose, be used as a means of still further stretching screen. This latter fact kept me from having loose pivots to slip through holes to keep frame together before screen was attached. I have used mine in various positions. I finally had a screw hook fixed permanently in a beam over each corner of screen, and a temporary screw hook under each corner of the frame in the floor. Four lengths of string just long enough to suit my requirements are kept in position, and enable me more quickly to put up and take down the screen. I slip eight brass hooks on the screen and fasten up, then they can easily be attached to screw hook in frame. Allowance must be made for this beforehand.

Last season I used to spend over half-an-hour in fixing my screen. Now I put it up in less than five minutes.

By a little thought anybody can arrange the screen frame to be erected in any position.

The whole cost of joints, poles, and hooks was four shillings.

——:o:——

Photography in Natural Colours Applied to the Optical Lantern.

By One Who Has Seen It.

A new apparatus will shortly be placed on the market, which practically solves the problem of photography in true colours, so far as the lantern is concerned It consists of three parts, camera, slides, and lantern. The process has been christened with the title "Verak," signifying "true colour," the inventor being Mr. A. W. Scott, of Weston-super-Mare. The patent application is entitled, "Improvements in the Method of, and Apparatus for, Producing Photographs, and in Exhibiting the same or the like."

The camera is a multiple camera having four lenses, which takes four pictures in the respective quarters of a single sensitive plate, which is necessarily of the isochromatic class.

Each lens is furnished with a coloured screen, so that a different colour of image is thrown upon each section, red light falling on one, blue light on another, and so on; Mr. Scott's theory being that white light is composed of *four* primary colours, and that all the colours of nature are simply combinations of two or more of these colours, mixed in varying proportions. Practically the pure colours are never seen singly; but it is possible by combining different coloured transparent films, to block out all but one colour, which can alone penetrate the screen; and with this colour a photograph is taken on one section of the Verak negative. The four negatives are taken simultaneously, by simply removing the large cap (covering the four lenses) for a few seconds. Each section requires the same length of exposure as the other three, as the lenses are fitted with various sized stops, the red being full aperture of $\frac{3}{4}$in., the others have very small holes. It will be observed that it is just as easy to take a negative by this process as by any single lens camera. The subsequent treatment is precisely the same as with ordinary dry plate photography. The negative plate is developed and dried. A positive is then made by contact on any good lantern plate. This positive is then covered by a protecting glass, with a paper mat between, having four apertures, one for each picture; and the slide when bound up with the customary black paper edging is finished. It presents four little photographs of the same object, all in black and white, all alike in outline, but *not* in the shading.

A special lantern is used to display the slides. This is externally similar to an ordinary single lantern, with one limelight, and a 4in. condenser, in front of which is placed a glass painted red, blue, &c., in its quarters, and in front of this is placed the Verak slide. Thus red light goes through the picture originally produced with red light in the camera, blue light through the picture taken in the blue, and so on. A very simple automatic self-acting arrangement of lenses in front of the slide collects all the rays issuing from the four images, and projects them on to the screen about 6ft. or 10ft. diameter, the result being a clearly defined single image in natural colours. The brilliancy of this image is not quite equal to the ordinary lantern disc, but with the oxy-benzoline limelight of 800 candle power at our disposal, this is not practically a drawback.

The apparatus will shortly be exhibited at the London photographic societies, arrangements having been made with an eminent member of the Camera Club to introduce the Verak process at one or two of the leading societies.

——:o:——

To judge whether any plate has a sufficiency of emulsion upon it, look at its back after development and before fixing, and if any detail is visible almost as clearly as in the front, the thinness of the film is detrimental.—*Chapman Jones.*

HAVING tried limelight for enlarging and found it tedious, and daylight uncertain, I have used magnesium ribbon with uniform success.—*J. S. Dicken.*

IF lantern transparencies have been toned with mercury, they should receive a coat of varnish in order to preserve them.—*Wm. Brooks.*

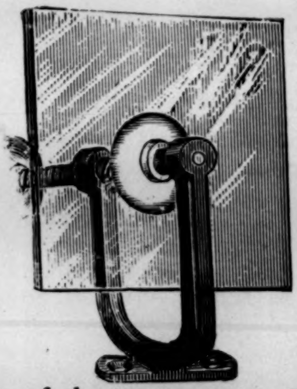
A THIN leather used by bookbinders will prove better than paper for binding the edges of lantern slides.—*A. A. Inglis.*

Editorial Table.

PLUMB INDICATOR.—This neat and useful attachment for a camera, of which we give a cut, has been introduced by the Thornton Pickard Manufacturing Company, of Manchester. It is packed in a box with screws ready for being screwed in position, for the sum of one shilling. It responds quickly to the slightest movement of the camera, which can be readily levelled when fitted with one of these indicators.

CATALOGUE.—In looking over the large catalogue lately issued by Mr. Walter Tyler, 48, Waterloo-road, we observe that it contains a number of pages explanatory of the working of lanterns which will be found very instructive reading. In single lanterns, various styles are illustrated, including the Helioscopic lantern, of which the maker is justly proud. One finds various arrangements for changing the slides, as in the Metamorphoser and Terpuoscope lanterns. Biunial lanterns are also well represented, and we notice triunials ranging in price from about ten to nearly one hundred pounds each. Lantern fittings are depicted in endless variety. To mention anything about the slides in the catalogue would be out of all reason in the space at our disposal, for there are about 350 pages of titles, which consist of mechanical, hand-painted, plain and coloured photos, chromo, and others; photos being 1s. plain, and 6d. extra if coloured. To produce a catalogue of this style is a large undertaking, and to those interested we have pleasure in recommending it.

LANTERN SLIDE CLAMP.—We have received from the Photographic Enterprise Company of 12, Priestly-road, Birmingham, clamps for lantern slides. These clamps are made in two styles, the better of which is provided with means for securing it in position on the bench or table in front of the worker. The mat and cover glass having been placed upon the transparency, these are, by a turn of a screw, held in position for binding, a mere touch sufficing to bring the different edges of the plates uppermost, whilst the relative position of the transparency, mat, and cover glass remains undisturbed. This little instrument, of which we give a cut, is substantially and neatly made of brass; whilst as regards price it is surprisingly low. Those of our readers who experience any difficulties in mounting slides will do well to provide themselves with this handy article.



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GERMANY is without doubt in the lead over all nations on the globe in the respect of photographic educational facilities.—*H. H. Clark.*

Flashes on Lantern Topics.

By Bull's-eye.

A night with a selection of the slides on exhibition at the Edinburgh Society's Exhibition confirms my expressed opinion of those sent for competition. A portion of the exhibits only could be taken in the hour allotted, which hour is an added attraction every Tuesday.

Many of the quaint Norman nooks and corners, by the president, Mr. Blanc, were exceedingly fine. Those of Wilson and Co., James Dore, and A. H. Webling were also fine, and a set by J. Brightman, of land and water effects which have already secured a medal at the Crystal Palace, were about perfect in their way; they were executed by contact printing on prepared collodio chloride plate, and toned in various colours.

The Council have acted wisely in making the use of the optical lantern a speciality, three of the lectures in the syllabus being so illustrated. One of the experiments by Dr. Drinkwater in these lectures, showing the action in a cell slide of dissolution and reproduction by the electric battery, was capitally done, and went to prove the analogy, if not the certainty, of electric action during development of the image.

The awards have not yet been published, but I hear murmurs both low and deep as to the situation amateurs will occupy, more especially where they have sent in enlargements from their negatives as their own, not the enlarger's work. As it was expressed, when one sends a negative to get an enamel picture, no one dreams of claiming the enamel as his, but gives the credit to the proper party. The cases are pretty nearly parallel, even without raising the other point of selling prints and making money by them, as is done by many amateurs.

That new suggestion put in practice by the inventor, Mr. Macglashan, of Edinburgh, of making a bad negative print as well as a good one, should be a boon to many readers. If a negative by reason of bad lighting has too much light or even halation in parts, while it is weak, but full of detail in the darker parts, a print not fully printed up is taken, washed, and fixed, and when roughly washed after the hypo, and dried, it is attached to the front of the negative in proper register, and a perfect print is got through both print and negative. It has not as yet been tried for lantern slides, but will be in few days.

As a proof of the excellence of the entire show, one of the officials of the Liverpool Society—secretary, I believe—gave expression to his opinion that it was the best he had seen, and I may add my own. With the exception of the Pall Mall Exhibition of this year and the international at Ghent, in 1880 (at which, by-the-bye, although not a competitor, I was awarded a diploma of honour and a special silver medal), I have seen all the most prominent in this country, France, and Belgium, and none come up to this Edinburgh one for variety of processes, for excellence of result, or for artistic quality of work.

In lantern exhibitions of the works of members of societies, a limit should be put to the quantity, but none to the quality, except to exclude the really bad one. On December 22nd I looked in at the Glasgow Amateur Photographers' Exhibition of Slides, in the Philosophical Institution there, and the number passed before the audience was about two thousand. What educational good can be got from such a test to a fellow's patience on a severely cold night? Less than half the number, and their qualities fully expiscated, would do more good, and if the pictures must be shown multiply the meetings.

—:o:—

Correspondence.

LANTERN POINTER.

[*To the Editor.*]

Sir,—When explaining diagrams, maps, &c., while being exhibited by the optical lantern, it is often desirable to be able to indicate particular spots on the screen with a pointer. For this purpose I used to have an ordinary straight pointer, but as the thin end of this was often confused with the lines of the diagram on view, I was led to the adoption of the following simple and, in my hands, effective plan. I procured a cheap Japanese fishing-rod (cost 7½d.), which consisted of three parts, easily put together and taken to pieces. On the point of the top part I have a stout cork stuck firmly. I find this to be all I desire, the cork showing well against the lighted screen, and being readily distinguished from lines, trees, or foliage of the picture. After use the rod is detached, and the three parts held together by two elastic bands for convenience of carriage.—Yours truly, Duffer.

CONSTRUCTION OF OIL LAMP.

[*To the Editor.*]

Sir,—I have long been of the opinion that it should be possible to obtain a better oil illuminator than that given by lamps of the Sciopticon class. I see from your last issue that Messrs. Thomas and Co., of Exeter, have found out a better form of burner. As this is just what many people like myself have been craving after, I think it would be valuable information if you would publish particulars of the Thomas form of lamp, and also state if it is really better than that now generally used, for, of course, *every maker's lamps are the best.* Can you state the principle of the Stock lamp?—Yours truly, Anxious.

Birmingham.

[Should Messrs. Thomas afford us the opportunity of trying their lamp, we shall be pleased to report upon it. At time of publication we had not received one of the lamps invented by Mr. Stocks, but believe they are to be ready in a few weeks.—Ed.]

GAS-BAG EXPLOSIONS.

[*To the Editor.*]

Sir,—In reply to Dr. Carey Coombs' request for experiences of gas-bag explosions during exhibitions, I have used gas-bags several hundreds of times without having experienced or even having witnessed an explosion. It is not wise to fill the jet with wire gauze, or any other means of stopping an influx of flame, as I have found by experiments that the flame can be sucked through wire gauze, even in several layers, a tube of two inches long, filled with the finest gun shot procurable, and similar obstructing agents of like nature. I have not tried powdered pumice, which you may remember has been strongly recommended by the late Mr. Hardwich as a safety medium, as I hold that safety with a gas-bag is quite ensured by keeping plenty of pressure on it, and I have never heard of any explosion having taken place when such was the case.—Yours truly, Fred B. Lawrence.

CHROMO-LITHO SLIDES.

[*To the Editor.*]

Dear Sir,—Our attention has been called to the article on page 64 of your December number by Albert Tranter on chromo-litho slides, in which he complains of the tedious process of having to use *several sorts of varnish* in transferring these. Surely Mr. Tranter cannot have manipulated these pictures lately, or he would know that one varnish only is required throughout now, and that the process is now so simple that a child can work it with ease and thoroughly satisfactory results. As the only firm in England now manufacturing chromo-litho slides we feel called upon to take the matter up, as if Mr. Tranter's article was read by novices it would certainly deter them from experimenting. We have a staff of twenty assistants, who can turn out *two thousand* of these pictures finished complete in a day, so that it will be at once seen there can be no tedious process in the operation. We are fully aware of the advantages that would accrue could the colours be printed direct on to a glass firm, but as the cost of this would be far more expensive through the care required in passing the glasses through the rolling presses, no advantage in price would be gained, but quite the other way. We expect, however, shortly to produce pictures that will not require any varnishing, but can be put on the glass in the simplest possible manner. If you will kindly insert this letter, so as to correct the wrong impression given by Mr. Tranter, we shall feel greatly obliged.—We are, yours faithfully, THEOBALD AND CO.

Bath-place, Kensington.

ETHER-OXYGEN SATURATOR.

[*To the Editor.*]

SIR,—I am of the same opinion as your correspondents, "J. H. R." and "Saturator," as to the qualities of the ether-saturator. I have always used it with a bi-unial lantern, and found it has always, so far, answered exceedingly well. I trust now that Mr. Morton says it cannot be quite safe—thereby having the same opinion as Newton and Co. have in their catalogue as to accidents—that the question may be threshed out, and the names of some of the places where explosions have occurred be given with the causes.

I always use mine with a pair of safety pumice valves fixed close to inlets of dissolver, with no pipes lying about on floor, the longest piece of tubing being not more than two feet long. This is managed by placing lantern on front part of table, then the cylinder at back of lantern, and the saturator behind it, so that I have the whole of the apparatus under my eye and control, none of the audience being able to tread on the tubing to check the pressure of oxygen.—Yours respectfully, F. J. B.

THE LANTERN FOR SUFFERING HUMANITY.

~~A. R. DRESSER,~~ of Bexley Heath, Kent, writes :—"I note your article on 'The Lantern for Suffering Humanity,' and am one with you, as I have been at that little game now for three or four years. I give twenty to thirty shows a year for the poor, and always give everything free when there is no charge at the door, but when they charge (which is seldom) then I expect them to pay for the gas. Another plan I have is to retain say thirty to fifty seats, and charge sixpence to grown people, and then what is taken by sale of these sixpenny seats I spend in sweets and cakes for the children, and find that goes well. That is the way I work, and I fancy I am well known as one who gives lantern shows for the poor. I am willing to help you in any way I can, either with slides (on loan), money, or with my experience, and will gladly conduct three or four a season personally. If you like to have a meeting at any time I will attend it if in London, or will meet you and talk it over."

CHARLES E. RENDLE, of 25, Alma-road, St. Paul's-road, Canonbury, says :—"With reference to the above I shall be pleased to receive an invitation should you arrange a conference on the subject. Some years ago I gained much experience in this way—in a musical and elocutionary point of view, and as I am now studying the optical lantern, I have an idea that I could be useful in the matter. I wish your worthy object every success."

HON. SLINGSBY BETHELL, of Chelsea Lodge, 42, Tite-street, writes as follows :—"I will send you in a few days (when well enough to select them) a box of lantern slides for use at hospitals, schools, &c. My lanterns, &c., are always at your disposal, and I shall be pleased to lend them to any experienced and skilled operator. It will also give me pleasure to give an entertainment myself to any institution that takes pleasure in such exhibition. Hospitals and institutions, educational or otherwise, would benefit much by one of their body (*e.g.*, secretary or treasurer) becoming a member of the Lantern Society. Our loan collection of slides will shortly be available, and, I trust, extensive."

WILLIAM OUIN, of Waverley-road, Park-lane, Park, Lower Tottenham, writes :—"I have read with much pleasure your suggestion for lantern entertainments to the convalescent patients in our hospitals, and I beg to say that I think the idea a most excellent and benevolent one, and if it can be carried out will doubtless prove of immense value, and be a source of great pleasure and intellectual profit to those before whom the entertainments may be given. They would doubtless be looked forward to with more than ordinary pleasure, and would go a long way to alleviate the suffering thrrough which the patients are passing, or make the time of their waiting to leave less burdensome. Surely, if this was the only point of good that it would effect, it would be worthy of the utmost help we could render it. I cannot but think that such a scheme would not be wanting in willing hands and loving hearts to carry it to a successful issue. Cannot we have a Hospital Lantern Society? Many might, for such an object, give two or three suitable lanterns, whilst others by contributing some half-dozen slides each could soon make up an interesting collection. I wish the scheme the highest success."

[As space will not permit of the further publication of letters, we have pleasure in stating that Mr. Walter Tyler, of Waterloo-road, has promised to present a lantern and to lend slides; Messrs. Perken, Son and Rayment, 99, Hatton Garden, either cash or apparatus; Mr. E. G. Lee, of Cullercoats, slides; Mr. Robert H. Clark, of Royston, slides; whilst others have signified their intention of rendering assistance. We hope to see those interested at the meeting announced on the second page of this issue.—ED.]

—:o:—

Society Meetings.

CAMERA CLUB.—On Thursday, December 11th, Lieut. C. E. Gladstone, R.N., read a paper on Interior Photography. The Rev. F. C. Lambert occupied the chair and in opening the proceedings alluded to this as the last Thursday evening meeting in the present club premises. The lecturer dwelt upon the deep interest attaching to the study of architecture and the fine field it opened up to the photographer. In England we were particularly favoured in respect of our cathedrals. He described his apparatus and treated of the whole of the special technicalities in interior work, giving many excellent hints from his wide experience and illustrating his remarks by handing round film negatives and prints. A discussion followed, in which Major Nott, and Messrs. Maskell, Davison, Freshwater, Clark, Corbould, and the chairman took part.

CROYDON MICROSCOPICAL AND NATURAL HISTORY CLUB.—The twenty-first annual *soiree* of the Croydon

Microscopical and Natural History Club was recently held in the Public Halls, Croydon. The attendance was large. Among the photographs of special interest were some taken by Mr. Weir Brown with a hand camera of his own construction, illustrating some fine effects in Epping Forest and Dolgelly. Mr. Hirst, an amateur of twelve months, had some good hand-camera work. A series of fine views of condemned parts of Croydon were shown by Mr. Low Sarjeant, who also exhibited lantern transparencies from the same negative. Some 12 x 10 of both the interior and exterior of Old Palace, Croydon, by Mr. C. M. Major; marine and other views by Mr. Russell; and some pretty river scenes by Mr. Gower. A fine "sunset" was shown by Mr. McKean. Mr. Straker, amongst several views, had one of a curious chimney-corner. An artistic group of three taken by Mr. Corden was very prominent. Mr. Allen, who makes a special study of animals, exhibited some interesting pictures of thoroughbreds from Marden Park Stables, and some transparencies of Highland cattle. Interiors of Smallfield Place, Burstow, including a handsome staircase, were shown by Mr. East Mr. Brooks had a number of fine transparencies displayed on the tables, including interiors of Windsor Castle, and Mr. Oakley exhibited transparencies on Thomas's plates, which vied favourably with those of Mr. Brooks. Some good general exhibits were shown by Messrs. Wylde, Stunt, Sparrow, Baldock, Barber, Purser, Hovenden, Collier, Carter, Gower, and Goddard. At intervals, under the able manipulation of Mr. W. Brooks, three lantern exhibitions were given in the Upper Hall, and so great was the interest shown that even standing room was impossible after the exhibition had commenced. Many of the slides were the work of Mr. Brooks and other members.

DEVON AND CORNWALL CAMERA CLUB.—The opening meeting of the society's winter session was held at the club rooms, the Athenæum, Plymouth, on the 8th Dec. Mr. Murray, vice-president, occupied the chair. A letter was read from Mrs. Mildmay, thanking the clubs for the presentation album of views of Flete. A large number of lantern slides by various members of the clubs were exhibited, the contributors being Messrs. Aldridge, Carnell, Micklewood, Murray, Tweedy, Weekes, and Worth. When the supply of slides was nearly exhausted the limelight failed, and the oxygen bottle was found to have been emptied.

LANTERN SOCIETY.—At a special general meeting held on December 8th, it was resolved that the entrance fee should be abolished, and members joining now are liable only for the subscription. At the ordinary meeting held on the same night, a paper was read by Mr. J. G. Grenfell, F.R.M.S., on "Means of Protection amongst Animals." The paper, which was illustrated by about 50 slides, was of great interest, the lecturer describing the various means adopted by animals for their protection in the great struggle for the survival of the fittest, some of the methods employed being of a remarkable description. On Dec. 22 Mr. C. E. Gladstone gave an interesting lecture on "Architecture in Normandy and Brittany." The slides shown (70) were made from the lecturer's own 12 by 10 negatives, taken on stripping films in a roll holder during last summer. They comprised views of ecclesiastical and domestic architecture in Normandy and Brittany, and the lecturer pointed out the characteristic marks of the various styles, and also the differences existing between French and English architecture in the corresponding styles. The following are the arrangements of the society for the first part of the year:—Jan. 12th, E. M. Nelson, Esq., F.R.M.S., on "The Lantern and its Relation to Photography and the Microscope." Jan. 26th, C. Harrison, Esq., on "The Civilisation of Egypt and Assyria, as illustrated by its Physical Remains and Records." Feb. 9th, J. Traill Taylor, Esq., on "Lenses and Condensers for Lantern work." Feb. 23rd, exhibition of lantern slides for members and their friends.

LEICESTER AND LEICESTERSHIRE PHOTOGRAPHIC SOCIETY.—On 26th Nov. a conversazione was held by the members of this society at the Co-operative Hall, High Street, and was well attended; the members are to be congratulated on the thorough success of their undertaking. Several of the members showed selections from their work, which, taken as a whole, formed a very interesting and artistic exhibition of the various branches of photography. During the evening a lecture was given by Mr. Walter D. Welford, on "Hand camera work," illustrated by a large number of slides from instantaneous exposures on almost every kind of moving object. The views were of a novel character, and illustrated every form of hand camera work. They were shown by a powerful biunial oxy-hydrogen lantern worked by Mr. Pierpoint. Refreshments were provided, and selections of music given by a select band. The arrangements were in the hands of Messrs. G. Bankart, F. G. Pierpoint, J. Porritt and H. Pickering (hon. sec.), to whom the success of the evening was in a large measure due.

NEWCASTLE-ON-TYNE AND NORTHERN COUNTIES PHOTOGRAPHIC ASSOCIATION.—The ordinary monthly meeting was held in the Mosley Street Café, Newcastle, on Tuesday, the 9th December, Mr. J. P. Gibson in the chair. Five new members were elected. The optical lantern which has been subscribed for by the members was in operation for the first time, and over 250 slides by various gentlemen put through. The lantern, which was operated by Messrs Ridgway and Pratt, gave great satisfaction to the large number of members present. Nominations for officers for the current year were received, and the election will take place at the annual meeting in January next.

SHEFFIELD AND DISTRICT OPTICAL LANTERN SOCIETY.—The usual monthly meeting was held in St. Paul's schoolroom on Nov. 19th under the presidency of Dr. Manton. Mr. H. Stamforth, the vice-president, gave a short lecture on the "Manipulation of the Optical Lantern." After describing the manipulation of the oil light, Mr. Stamforth went on to describe the blow-through and mixed jet, using for his experiments a magnificent triple lantern of his own manufacture, fitted with his new patent jet holder and regulator, which is extremely simple in its action for centreing the light and was much admired by the members. Amongst the slides exhibited during the evening were those of the competitors for a prize offered by the President. The competition was decided by voting, Mr. Woolhouse gaining the prize.

Notes and Queries.

Inquirer.—Write to W. H. Oakley and Co., 202, Grange-walk, London, S.E. We understand they are the makers of the instrument you ask about.

J. Marks writes: "I am desirous of making a water varnish for coating some paper. I know it consists of shellac and water; but I find that the water here (Woburn Sands) will not dissolve it. Kindly let me know if it is necessary to use distilled water in order to get the shellac to dissolve?" *Reply.*—You will find the following answer your purpose: Crushed bleached shellac, 10oz.; borax, 2oz.; water, one quart: boil until dissolved; strain and cool. The water has not been at fault, as you suppose. It was the absence of the borax.

Manxnian.—(1) The chlorate gives a slightly better light, but nothing to compensate for the extra trouble. You will find bottles handy, safe, and clean. (2) We cannot understand why your bookseller cannot obtain the journal earlier. It is published promptly on the date advertised.

N. J.—In the following order—3, 2, 1, 4.

H.—It has been sent as requested.

Lux and Edinburgh.—Your letters were forwarded to our Sheffield correspondent in due course.

J. F. F. writes: "I was present a short time ago at an exhibition with a single lantern (limelight, mixed jet), where the rolling curtain effect of substituting one slide for another was produced. I am familiar with the method of doing this in bi-unials by means of the diaphragm covering the two condensers alternately, but should be glad to know how the effect is produced with a single lantern?" *Answer.*—If you mean that the one picture appeared to roll up, revealing another apparently behind it, a bi-unial must have been employed; but if the curtain descended on the one picture, and on being raised revealed another, you will find an account of a single lantern capable of giving this effect in an article on page 44 of this journal, for November, 1889.

The correspondent who inquired the cause of his tubes blowing off with ether saturator gave neither name nor address. If same is sent the query will have attention.

M. M.—(1) Procure what is termed a Y-piece. Any dealer in lantern apparatus will supply it. (2) It is possible, but we think very improbable. (3) A blow-through jet, if you are using gas from the main; either a bottle or bag for the oxygen. (4) From Wood, of 74, Cheapside. We do not know if you can obtain the protector in your town.

A.—Mr. Suter's address is 2, Cromwell-road, Forest-hill, London, S.E.

Wm. R.—Why have the fancy styles of seams at all, if you have a selvage on the material? Join the widths edge to edge, or what is termed "sewn over."

Rex.—We believe Mr. W. C. Hughes, of Kingsland, has a skeleton form of lantern; but we have neither seen it or a description of same. Write him.

Richard Joyner inquires for "particulars of a mixture that will make ground glass." *Answer.*—We presume you refer to ground glass varnish. If so, it is composed as follows:—Sandarac, 90grs.; mastic, 20grs.; ether, 2oz.; benzole, 1oz. (more or less, according to the nature of the surface required).

J.—There is no patent, and you are quite free to make the camera commercially, if you think you can compete with other firms. We cannot say which is the best hand camera. We have published accounts of those we have had an opportunity of trying.

Amateur writes: "This season I have been using ether saturator with gas bottle and Clarkson's regulator with single lantern. I turn out oxygen first and ether next at jet, which is supplied with Noakes' valves instead of taps. On former occasions I have only had a slight pop on turning out. Last night, however, after turning out oxygen, and on turning out ether, I had a tremendous bang, and there was a flame inside the regulator on top of gas bottle. I pulled off tube, and there was a flame at end just like a gas burner. I blew this out and turned off bottle. Can you or any of your readers suggest the cause of this, and explain how the flame could travel from jet through tube and saturator back to regulator without setting fire to ether in saturator, and can a recurrence of this catastrophe be prevented in future? Of course, the india-rubber of regulator is ruined. I may say I have had some experience in working lanterns, having had a triunial for some years, using blow-through jets, and on one or two occasions ether." *Reply.*—We have shown your letter to an experienced operator with ether, who says: "It is evident that there was too great a quantity of ether in the saturator, and that a little found its way down the tubing towards the bottle. The flame must have passed through the saturator towards the oxygen supply, consuming the gas on its way. Pinching the pipe, or otherwise interfering with the steady flow of gas, is very liable to cause the flame to fly back."

H. W.—(1) The regulator should allow all the gas to be used. It is for giving a uniform pressure of gas; yours is evidently out of order. (2) Cobalt varnish mixed with lamp-black will answer for painting the margins of the slides black. (3) Messrs. Fry, of Chandos-street, have issued a treatise on lantern transparency making, and we hear that Thomas and Co. (Ltd.), of Pall Mall, have issued a prospectus containing information on this subject. (4) Try masking. (5) We have attended to the Yeovil affair in "Notes."

R. M.—There is no necessity for using two stands and pressure boards in the manner you mention. One set of frames for holding both bags will answer. We shall be pleased to see you if you call.

JOHN FRASER sends us the following communication:—"I would be glad to receive a reply in your 'Notes and Queries' column as to the best method I could use for curing the want of crispness round the edge of my disc on screen. I own a bi-unial, and find it very difficult to cure the yellowish, hazy line, which cuts off the corners of my photo views when projected on the screen. From the different ways I have tried I find nothing wrong with the lenses; therefore, do you think it can be the light? It is safety blow-through jets that I use, but cannot find a distance from the condensers at which both the centre and the edge of disc are pure. If I push the lime too near a faintness appears in the centre, and when I take it away the edge gets yellow." *Answer.*—The condensers are too small.

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AN entertainment was given at the London Hospital on Christmas Day by some members of the Brixton and Clapham Camera Club, the lantern being under the management of Mr. F. W. Levett, the secretary. The slides were lent by Mr. A. R. Dresser, Messrs. R. W. Thomas and Co., Walter Tyler, Editors of the "Amateur Photographer" and "Optical Magic Lantern Journal."

——:o:——

THE first camera fitted with a finder was made in 1873 for Mr. F. York, for use in the Zoological Gardens.—*Jas. Robinson.*